

CLAIMS

It is claimed:

- 5 1. A gripper kit for installation on a ball lift bowling ball return mechanism having opposed pulleys connected by an internal frame structure, and track rails opposing the opposed pulleys, the gripper kit comprising:
 an endless belt positioned about the opposed pulleys;
 track rail covers covering the track rails; and
10 tapered thimbles to guide and facilitate delivery of a ball into a channel formed between the endless belt and at least a surface of a portion of the track rail covers.
2. The gripper kit of claim 1, wherein the endless belt includes a
15 neoprene rubber that exhibits frictional properties and hardness characteristics.
3. The gripper kit of claim 1, further comprising a tension bracket
20 having a plurality of elongated slots providing adjustment capability for position of the ball lift.
4. The gripper kit of claim 1, wherein the track rail covers comprise
 one of (i) a pair of upper track rail covers and a pair of lower track rail covers
 disposed about respective ends of the track rails and (ii) a single piece
25 construction.
5. The gripper kit of claim 1, wherein the track rail covers have a
 cross section to allow than to fit over corresponding track rails.

6. The gripper kit of claim 1, wherein the thimbles are fitted to a lower portion of the track rails.

5 7. The gripper kit of claim 6, wherein the thimbles are made of a single piece or multi-piece construction.

8. The gripper kit of claim 1, wherein the tapered thimbles are formed in a conical shape.

10 9. The gripper kit of claim 8, wherein the tapered thimbles are constructed of a urethane material or other slip resistant material.

10. The gripper kit of claim 1, wherein the tapered thimbles are adjustable to provide multiple wear areas.

15 11. The gripper kit of claim 1, wherein the tapered thimbles shorten a time for the ball to return to a waiting stage.

20 12. The gripper kit of claim 10, wherein the tapered thimbles reduce a number of times a ratchet assembly actuates to lift a ball into a ball return entry area.

25 13. A gripper kit for installation on a ball lift return mechanism having a frame structure and track rails opposing the frame structure, the gripper kit comprising:

an endless belt positioned about opposed pulleys disposed on the frame structure;

30 a tension bracket attaching a mechanical linkage to the frame structure, the tension bracket having elongated slots for adjustment of position of a ball lift without removal of the tension bracket;

a plurality of rail covers covering the track rails; and
means for reducing a number of times a ratchet assembly actuates to
lift a ball into a ball return entry area.

5 14. The gripper kit of claim 13, wherein the reducing means are
thimbles disposed at a lower portion of the track rails to guide and facilitate
delivery of a ball into a channel between the endless belt and at least a surface
of the track rail covers.

10 15. The gripper kit of claim 13, wherein the track rail covers are
disposed about the track rails.

15 16. The gripper kit of claim 13, wherein the track rail covers have a
cross sectional profile to match that of the upper portion of the reducing
means to allow for smooth transition of the bowling ball from the thimbles to
the track rail covers.

20 17. The gripper kit of claim 13, wherein the track rail covers are made
of a softer material than that of an inner core.

 18. The gripper kit of claim 13, wherein the reducing means are
thimbles constructed in a tapered shape out of a softer material than an inner
core and is one of a single-piece construction and multi-piece construction.

25 19. The gripper kit of claim 18, wherein the thimbles are made of
urethane or other non-slip material.

30 20. A ball return mechanism, comprising:
an internal frame structure;
two opposed pulleys connected by the internal frame structure;

an endless belt caused to turn by the two opposed pulleys;

a pair of track rails opposing the endless belt, the pair of track rails including rail track covers, the endless belt and the pair of track rails forming a channel therebetween;

5 thimbles provided at a lower portion of the pair of track rails;

a lift arm assembly attached proximate lower end portions of the track rails proximate to the thimbles; and

a mechanical linkage attached to the internal frame structure through an upper support bracket having a series of elongated slots that provide
10 adjustment capability of the upper support bracket and position of a ball lift without removal of the upper support bracket from the mechanical linkage and the internal frame structure.

21. The ball mechanism of claim 20, wherein the track rail covers are
15 disposed on the pair of track rails.

22. The ball mechanism of claim 20, wherein the thimbles are adjustable to provide multiple wear areas and have portions which are comparable in a shape and cross section to the lower rail covers.

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